

## PATENT ABSTRACTS OF JAPAN

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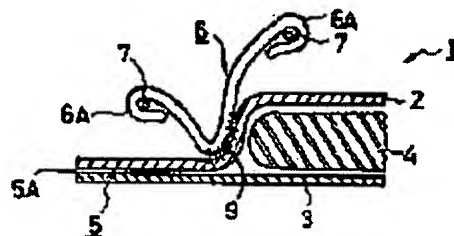
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## (54) DISPOSABLE DIAPER

## (57)Abstract:

PROBLEM TO BE SOLVED: To surely prevent leakage from the crotch region and the waist region by flexibly fitting thereto without producing space.

SOLUTION: In a disposable diaper having a fluid permeable front sheet 2, a fluid impermeable back sheet 3, an absorption body 4 positioned between both sheets, and a side flap 5 extended from longitudinal both side edges of the absorption body 4 to outward of width direction, a plurality of verge sections 6A formed extending is provided on a surface of the side flap 5 along the absorption body 4, and each of the plurality of verge section 6A stands from one fixed end.



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CLAIMS

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[Claim(s)]

[Claim 1] In the usage \*\*\*\* diaper possessing the side flap which extended to the method of the outside of the cross direction from the edges on both sides of the longitudinal direction of the absorber located between the surface sheet of liquid permeability, the rear-face sheet of liquid impermeability, and both [ these ] sheets, and this absorber It is the usage \*\*\*\* diaper which the fold section formed elastically is made to meet the above-mentioned absorber, are prepared in the front face of the above-mentioned side flap, and is characterized by two or more above-mentioned \*\*\*\* having started from the one fixed end, respectively. [ two or more ]

[Claim 2] Each above-mentioned \*\*\*\* is a usage \*\*\*\* diaper according to claim 1 with which a part of longitudinal direction [ at least ] is formed as alienation from the above-mentioned surface sheet.

[Claim 3] Each above-mentioned \*\*\*\* is a usage \*\*\*\* diaper possessing two or more elastic members according to claim 1.

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## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the usage \*\*\*\* diaper which has the leakage prevention structure which raised fit nature.

[0002]

[Description of the Prior Art] As a leakproof device about the crotch of a usage \*\*\*\* diaper, many things are proposed from the former. For example, along with the side edge section of a usage \*\*\*\* diaper, in JP,52-40267,B, JP,54-115939,A, JP,52-120045,A, and JP,57-89602,A, gathers are beforehand prepared using an elastic member, and \*\*\*\*\* which is stuck, is [ a diaper ] leakage-hard into a wearer's length-from-the-crotch-to-the-cuff part, and makes it it up and to understand is indicated. Moreover, the usage \*\*\*\* diaper which suits a wearer's circumference dimension of a foot, and can follow a motion is indicated by JP,59-157301,A, JP,60-199903,A, and JP,63-60405,U by arranging two or more elastic members from which the rate of expanding differs in the side edge section.

[0003] Moreover, the side-attachment-wall section or the flexible gathers which stands up is formed in the longitudinal direction of a side flap, and \*\*\*\*\* which is carried out up on leakage prevention and a fit disposition by these and to understand is indicated by JP,62-250201,A and JP,63-159501,A.

[0004]

[Problem(s) to be Solved by the Invention] However, in the above leakproof devices, the rigidity of a side flap becomes high by the elastic member to which it is placed between said side flaps by \*\*\*\*\* which prepares gathers up in the side flap in the length-from-the-crotch-to-the-cuff part indicated by JP,52-40267,B, JP,54-115939,A, JP,52-120045,A, and JP,57-89602,A, respectively, and to understand, and the flattery nature to the circumference of a foot falls. Consequently, the meant fit nature is not obtained, but there is a possibility of forming a clearance between a wearer's length-from-the-crotch-to-the-cuff part and a diaper, and leakage cannot fully be prevented. Especially, when a wearer is an active high age-of-the-moon child, there is a possibility that it may happen frequently that a kink \*\*\*\* diaper slips [ an absorber ] down, at the time of wear, and the danger of resulting in leakage becomes still higher.

[0005] Furthermore, it had become the cause which causes the leakage from a venter or a backside through the clearance formed [ in / the amount of (exfoliation section) non-connecting part unavoidably formed in the both ends of the longitudinal direction of a diaper on manufacture while, as for the thing in which made the elastic member intervene between surface sheet and rear-face sheets, and gathers were made to form, that most gives an adhesion means to an elastic member or rear-face sheet or surface sheet is, and / this exfoliation section ] at the time of wear.

[0006] Moreover, the diaper which prepared at a time one gathers which stood up in the side flap indicated by JP,59-157301,A, JP,60-199903,A, and JP,63-60405,U, respectively in order to make gathers stand up -- the rate of expanding of an elastic member -- high -- not setting up, since a gathers edge will touch the skin at a line if it does not obtain but is made such A length-from-the-crotch-to-the-cuff part can be pressed by gathers, and a length-from-the-crotch-to-the-cuff part may be made red, or may be damaged, and it cannot necessarily be satisfied on wear, and can say that the same is said of what has the side-attachment-wall section.

[0007] Therefore, the purpose of this invention is to offer the usage \*\*\*\* diaper which can prevent the leakage in the lumbar part while being able to prevent leakage certainly, without fitting flexibly to a length-from-the-crotch-to-the-cuff part, and producing a clearance.

[0008]

[Means for Solving the Problem] this invention persons did the knowledge of the ability to attain the above-mentioned purpose by preparing the leak resistance member of a specific gestalt in a flap, as a result of inquiring wholeheartedly about the leakproof device of the conventional usage \*\*\*\* diaper, especially a length-from-the-crotch-to-the-cuff part. This invention is what was made based on the above-mentioned knowledge. The surface sheet of liquid permeability, In the usage \*\*\*\* diaper possessing the side flap which extended to the method of the outside of the cross direction from the edges on both sides of the longitudinal direction of the absorber located between the rear-face sheet of liquid impermeability, and both [ these ] sheets, and this absorber The fold section formed elastically is made to meet the above-mentioned absorber, more than one are prepared in the front face of the above-mentioned side flap, and two or more above-mentioned \*\*\*\* offer the usage \*\*\*\* diaper characterized by having started from the one fixed end, respectively.

[0009]

[Embodiment of the Invention] Hereafter, this invention is explained based on the example shown in Figs. 1 - 7. In addition, the top view which Fig. 1 fractures a part of front face of one example of the usage \*\*\*\* diaper of this invention, and is shown among each drawing, The perspective view in which the usage \*\*\*\* diaper which shows Fig. 2 in Fig. 1 shows the condition of having curved to the front-face side, Fig. 3 the III-III line sectional view of Fig. 2, and Fig. 4 The IV-IV line sectional view of Fig. 2, Fig. 5, 3rd [ \*\* ] Fig. equivalent Fig. showing [ 6 ] other examples of the usage \*\*\*\* diaper of this invention, respectively, and Fig. 7 are sectional views in the location of the opposite side in Fig. 3 showing the example of further others of the usage \*\*\*\* diaper of this invention.

[0010] The surface sheet 2 of liquid permeability which forms the side in contact with a wearer's skin as the usage \*\*\*\* diaper 1 of this example is shown in Fig. 1, The absorber 4 which is located between the rear-face sheet 3 of liquid impermeability corresponding to this surface sheet 2, and this rear-face sheet 3 and the above-mentioned surface sheet 2, and absorbs excrement, The side flaps 5 and 5 of the pair which extended from the edges on both sides of the longitudinal direction of this absorber 4 to the method of the outside of the cross direction are provided, the above-mentioned surface sheet 2 and the rear-face sheet 3 carry out the polymerization of these side flaps 5 and 5, and they are formed in one. In addition, in this example, the cavities 5A and 5A in alignment with the configuration of a length-from-the-

crotch-to-the-cuff part are formed in the center of abbreviation of the radial border of the above-mentioned side flaps 5 and 5.

[0011] Moreover, the leak resistance member 6 which has the fold sections 6A and 6A of the pair elastically formed on the front face of the above-mentioned side flap 5 is formed along with the side edge of the longitudinal direction of the above-mentioned absorber 4, and this leak resistance member 6 is formed so that it may cover over the inside of the above-mentioned absorber 4 from the above-mentioned side flap 5. The above-mentioned \*\*\*\* 6A connotes one yarn-like elastic member 7 at least, and is elastically constituted by the longitudinal direction. Namely, this usage \*\*\*\* diaper 1 is in the condition developed as shown in Fig. 1. It is in the condition that the above-mentioned elastic member 7 was stretched, and this usage \*\*\*\* diaper 1 is always pulled to the inside within the longitudinal direction. At the time of use of this usage \*\*\*\* diaper 1 As shown in Fig. 2, while this usage \*\*\*\* diaper 1 curves to a front-face side, each fold section 6A of each above-mentioned leak resistance members 6 and 6, 6A starts, it is constituted so that pocket structure may be formed in the length-from-the-crotch-to-the-cuff section in the fold sections 6A and 6A of each [ these ] leak resistance members 6 and 6, and it is constituted so that it may be located to the inside of the above-mentioned absorber 4, as the fold sections 6A and 6A inside each leak resistance members 6 and 6 moreover show in Fig. 3.

[0012] In addition, the tape fasteners 8 and 8 are attached in the side flaps 5 and 5 of the backside of this usage \*\*\*\* diaper 1.

[0013] Without being influenced by the kink of the absorber with which the fold section with an elastic side flap follows in footsteps to active actuation of a high age-of-the-moon child at the time of wear according to the usage \*\*\*\* diaper of this invention, a wearer's length-from-the-crotch-to-the-cuff part is fitted flexibly, pocket structure can be formed in the interior of a length-from-the-crotch-to-the-cuff part, where this pocket structure is maintained, a wearer can be fitted, excrement can be closed in pocket structure, and that leakage can be prevented. Moreover, according to the usage \*\*\*\* diaper of this invention, since each fold section possesses two or more elastic members, a wearer's length-from-the-crotch-to-the-cuff part is flexibly fitted at the time of wear, and a length-from-the-crotch-to-the-cuff part is made red, or is not damaged.

[0014] Next, the above-mentioned leak resistance member 6 is further explained in full detail based on Fig. 3 and Fig. 4. It was fixed on the rear-face sheet 3, and said absorber 4 is pasted up so that the free edge may be formed by the side edge of the longitudinal direction of this leak resistance member 6, while the above-mentioned leak resistance member 6 to which covering adhesion is carried out with said surface sheet 2 and which this whole absorber 4 made the side edge of the longitudinal direction of this absorber 4 meet to the above-mentioned surface sheet 2 forms a fixed part 9 in a longitudinal direction by fixed width of face. That is, two or more above-mentioned \*\*\*\* 6A has started from the fixed part 9 as the one fixed end, respectively. And the endocyst of the above-mentioned elastic member 7 is carried out to the bending section which bent the above-mentioned free edge to the above-mentioned surface sheet 2 side, and was formed, and it constitutes the above-mentioned \*\*\*\* 6A. In addition, the above-mentioned leak resistance member 6 is \*\* by adhesives, such as hot melt, to the above-mentioned surface sheet 2. Although it wears or heat joining by the supersonic wave etc. is fixed, in order to improve the hand at the time of wear, immobilization by heat joining of a supersonic wave is desirable.

[0015] Moreover, as shown in Fig. 4, it reaches only to near the both ends of the longitudinal direction of the above-mentioned leak resistance member 6, but bending formation of the both-sides edge of the longitudinal direction of the above-mentioned leak resistance member 6 is carried out like \*\*\*\* near these both ends that do not connote an elastic member 7, and the above-mentioned elastic member 7 is being fixed to the above-mentioned surface sheet 2 so that two or more fixed parts 9 by the inside may be formed. That is, the fold sections 6A and 6A are formed centering on the field of a length-from-the-crotch-to-the-cuff part.

[0016] Moreover, although the fixed part 9 of the above-mentioned leak resistance member 6 may be installed anywhere as long as it is in the side flap 5, it is desirable that it is in less than 50mm at the method of outside from the longitudinal direction side edge of a setup of effective pocket structure and the point of wearing nature to the above-mentioned absorber 4, and it is more desirable that it is in less than 30mm. Moreover, as for the width of face of the above-mentioned fixed part 9, being formed in 3-20mm is desirable. 10-100mm has [ above-mentioned \*\*\*\* 6A and 6A ] the desirable die length of each cross direction, and inside fold section 6A is [ about 35mm and outside fold section 6A ] about 15mm more preferably.

[0017] It \*\*. The above-mentioned surface sheet 2 with a fiber nonwoven fabric, porous plastic film, etc. the above-mentioned rear-face sheet 3 With the plastic film of moisture permeability etc., the above-mentioned leak resistance member 6 With a fiber nonwoven fabric, porous plastic film as well as the above-mentioned surface sheet 2, etc., the above-mentioned absorber 5 It is desirable that the above-mentioned elastic member 7 is formed [ of what used the absorptivity polymer together by using split pulp as a principal member ] again, respectively by elastic elastic members, such as a polyurethane film of the shape of band-like or yarn or natural rubber. Moreover, as for the above-mentioned surface sheet 2, being formed with the ingredient of a hydrophilic property is desirable, and, as for the above-mentioned leak resistance member 6, being formed with the water-repellent ingredient is desirable.

[0018] Since the usage \*\*\*\* diaper 1 of this example is constituted like the above, in case this is worn, the fold sections 6A and 6A start, and the usage \*\*\*\* diaper 1 forms solid gathers while being pulled by the elastic members 7 and 7 of the fold sections 6A and 6A within the surface sheet 2 and curving by them (refer to the 1st Fig.). If it attaches firmly to the lumbar part with the tape fasteners 8 and 8 in this condition and this usage \*\*\*\* diaper 1 is worn, while the cavities 5A and 5A of the side flaps 5 and 5 will surround a length-from-the-crotch-to-the-cuff part, the fold sections 6A and 6A fit flexibly a length-from-the-crotch-to-the-cuff part, form pocket structure in a length-from-the-crotch-to-the-cuff part, and carry out the seal of the interior from the outside. Under the present circumstances, in order that the fold sections 6A and 6A may carry out the seal of a wearer's length-from-the-crotch-to-the-cuff part to it being also in a flat surface flexibly, a length-from-the-crotch-to-the-cuff part is made red, or is not damaged. Moreover, since this usage \*\*\*\* diaper 1 is not what infixed the elastic member 7 between the surface sheet 2 and the rear-face sheet 3 like the former, it is stuck, does not have a clearance and, as for the surface sheet 2 and the rear-face sheet 3 which form the side flaps 5 and 5, can prevent the leakage from the lumbar part certainly.

[0019] Moreover, this usage \*\*\*\* diaper 1 has the fundamental engine performance of leakage or fit nature to a consumer, and also is visually excellent. Moreover, since it is fixable only by pasting this usage \*\*\*\* diaper in the predetermined location of \*\*\*\* diaper 1 front face using the fold sections 6A and 6A which constitute solid gathers according to 1, in case this is produced, it is simple also in process, high-speed production can be carried out, and improvement in productive efficiency can be aimed at.

[0020] Moreover, Fig. 5 shows other examples of this invention, and the usage \*\*\*\* diaper 1 of this example is constituted like the above-mentioned example except [ all ] the fold sections 6A and 6A connoting two yarn-like elastic members 7, and being formed as the plane section of predetermined width of face, as shown in this drawing. And above-mentioned \*\*\*\* 6A and 6A are constituted so that it may start after this usage \*\*\*\* diaper 1 has curved, and it may be located above the surface sheet 2 with which inside fold section 6A covers an absorber 4 and may be located inside the side edge of the longitudinal direction of this absorber 4. Moreover, it sets up more greatly than

the rate of expanding of the elastic member of a side with the far rate of expanding of the elastic member 7 of the side near a fixed part 9 among the elastic members 7 and 7 of fold section 6A of the above-mentioned inside, and in the side near a fixed part 9, the rate of expanding is set up greatly and constituted from the far side by the elastic members 7 and 7 of fold section 6A of the above-mentioned outside.

[0021] Moreover, as for the plane section of the above-mentioned \*\*\*\* 6A, being formed in 5-20mm is desirable, and it is about 10mm more preferably. In addition, when the above-mentioned elastic member 7 is one band-like thing and is formed, the width of face should just be formed in the dimension which accomplishes the plane section of the above-mentioned width of face in the free condition.

Therefore, according to the usage \*\*\*\* diaper 1 of this example, the fold sections 6A and 6A can fit a length-from-the-crotch-to-the-cuff part in the plane section, and can prevent the leakage of excrement more certainly.

[0022] Moreover, Fig. 6 shows the example of further others of this invention, and the usage \*\*\*\* diaper 1 of this example is constituted like the 1st example except [ all ] having pasted up so that still more nearly another leak resistance member 6' to the leak resistance member 6 of the usage \*\*\*\* diaper 1 of the 1st example shown in Figs. 1 - 4 may form fixed part 9' on the front face of this leak resistance member 6, as shown in this drawing. And as shown in Fig. 6, width of face is narrowly formed rather than the leak resistance member 6, and the rate of expanding is greatly set up for the elastic member 7' from the elastic member 7 of another side, and another leak resistance member 6' is constituted so that fold section 6'A may start from fold section 6A of another side more greatly, as shown in Fig. 6. Therefore, according to the usage \*\*\*\* diaper 1 of this example, two solid gathers which incline towards the inside of an absorber 4 are formed, and from a wearer's length-from-the-crotch-to-the-cuff part and the groin, these are missing from a femoral region and more certainly fit.

[0023] Fig. 7 is drawing showing the example of further others of this invention. Moreover, the usage \*\*\*\* diaper 1 of this example As shown in this drawing, the inside of the side flap 6 is formed with the surface sheet 2. The outside is formed of the leak resistance member 6, an elastic member 7 is formed only in the inside edge of this leak resistance member 6, and another leak resistance member 6' is further prepared on the front face of this leak resistance member 6 like what is shown in Fig. 6. Therefore, according to this example, two solid gathers which incline towards the inside of an absorber 4 are formed, and the same operation effectiveness as the 3rd example can be expected.

[0024] In addition, in the usage \*\*\*\* diaper 1 of each above-mentioned example, although only what each absorber 4 presents a rectangle was explained, these absorbers 4 can raise fit nature further, if curve formation is carried out according to the cavities 5A and 5A of each side flap 5 and 5. Moreover, in the usage \*\*\*\* diaper 1 of each above-mentioned example, the leakage in the lumbar part can be more effectively prevented by covering the both ends of the longitudinal direction of each absorber 4 with each rear-face sheet 3 or another watertight sheet, and preparing an elastic member in the lumbar part further.

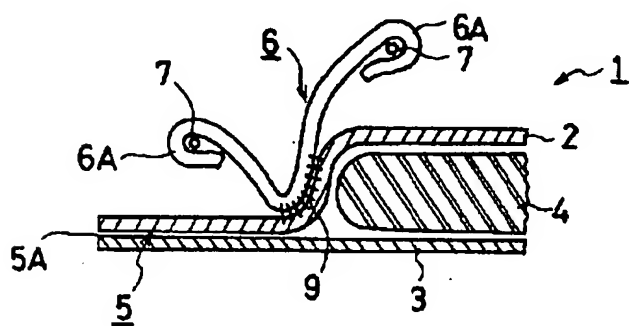
[0025]

[Effect of the Invention] The usage \*\*\*\* diaper of this invention can prevent the leakage in the lumbar part while being able to prevent leakage certainly, without fitting flexibly to a length-from-the-crotch-to-the-cuff part, and producing a clearance.

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[Translation done.]

Drawing selection Representative drawing

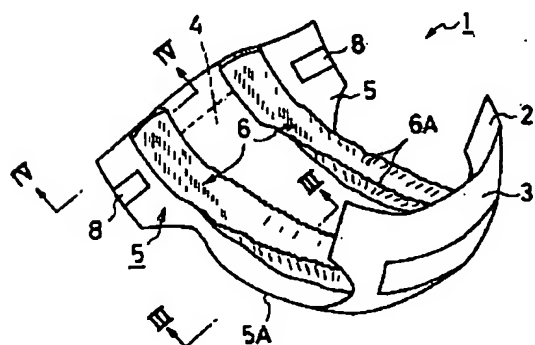


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Drawing selection drawing 2

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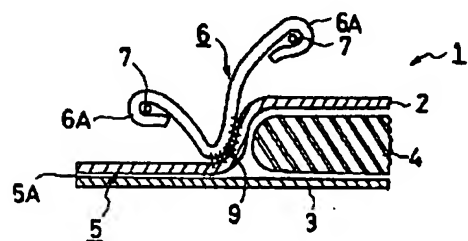


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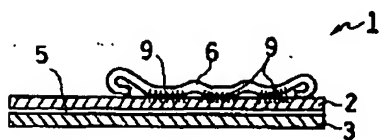
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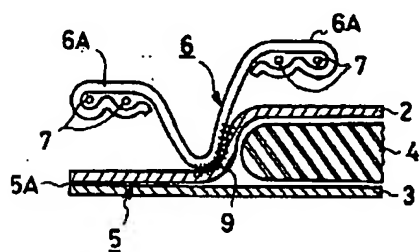


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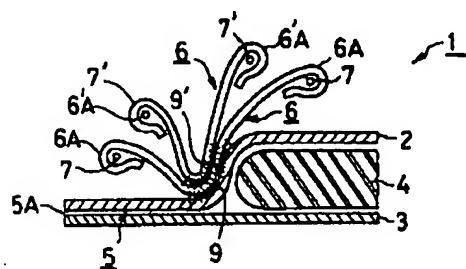
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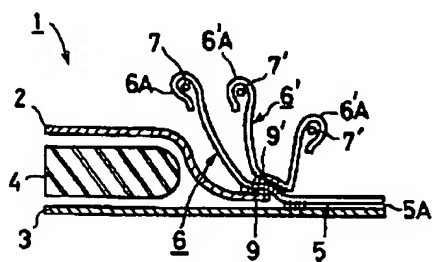
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Drawing selection drawing 7



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